reacting the reaction product with R<sup>1</sup>OC<sub>6</sub>H<sub>4</sub>CH<sub>3</sub> where R<sup>1</sup> is selected from the group consisting of Na, K, H and Li to produce an alkali phenoxy sulfonimide functionalized polyphosphazene of the formula  $[NP(OC_6H_4SO_2NR^1SO_2R_f)_x(OC_6H_4CH_3)_{Z-x}]_n$ .

38(new). The method of claim 37 wherein R1 is Na.

39(new). A sulfonimide functionalzied polyphosphazene homopolymer of the formula [NP(OC<sub>6</sub>H<sub>4</sub>SO<sub>2</sub>NR<sup>2</sup>SO<sub>2</sub>R<sub>4</sub>)<sub>2</sub>]<sub>n</sub> where R<sup>1</sup> is selected from the group consisting of Li, Na, H and K.

40(new). The homopolymer of claim 39 wherein R1 is Na.

41(new). A method of manufacture of a sulfonmide functionalzied polyphosphazene homopolymer of the formula  $[NP(OC_6H_4SO_2NR^1SO_2R_f)_2]_n$  where  $R^1$  is selected from the group consisting of Li, Na, H, and K and ,  $R_f$  is a  $C_1$ - $C_8$  perfluoroalkyl, comprising,

reacting (NPCl<sub>2</sub>)<sub>n</sub>, where n≥3 with R¹OC<sub>6</sub>H<sub>4</sub>NR¹SO<sub>2</sub>R<sub>4</sub> where R¹ is selected from the group consisting of Li, K and Na and , R<sub>5</sub> is a C₁-C<sub>8</sub> perfluoroalkyl, at a temperature of about 60 °C to about 200 °C at a pressure of about ambient to about 12 bar for about 12 hours to about 40 hours.

42. (new)he method of claim 41 wherein R1 is Na.

43(new). A phenoxy sulfonimide functionalized polyphosphazene copolymer of the formula [NP(ZR²),(ZC<sub>6</sub>H<sub>4</sub>SO<sub>2</sub>NR¹SO<sub>2</sub>R<sub>ℓ</sub>)2-x]<sub>n</sub>, where , R<sub>ℓ</sub> is a C<sub>1</sub>-C<sub>6</sub> perfluoroalkyl, where R² is selected from the group consisting of -CH<sub>2</sub>CH<sub>3</sub>, -C<sub>6</sub>H<sub>4</sub>CH<sub>3</sub>, -C<sub>6</sub>H<sub>4</sub>CH<sub>3</sub>, -CH<sub>2</sub>CH<sub>2</sub>OCH<sub>2</sub>CH<sub>2</sub>OCH<sub>3</sub>, -CH<sub>2</sub>CH<sub>2</sub>OTHP, -C<sub>6</sub>H<sub>4</sub>COOPr, -CH<sub>2</sub>CF<sub>3</sub>, -CH<sub>2</sub>CF<sub>2</sub>OCF<sub>2</sub>CF<sub>2</sub>OCF<sub>3</sub>, -C<sub>6</sub>H<sub>4</sub>CF<sub>2</sub>, -C<sub>6</sub>F<sub>5</sub>, and mixtures thereof, Z is O or NH, and R¹ is selected from the group consisting of Na, Li, H, and K.

44(new). The copolymer of claim 43 wherein R<sup>2</sup> is -C<sub>6</sub>H<sub>4</sub>CH<sub>3</sub>, and Z is -O-.

45(new). The copolymer of claim 43 wherein R1 is Na.

46(new). A method of making a phenoxy sulfonimide functionalized polyphosphazene copolymer of the formula [NP(ZR²)x(ZC6H4SO2NR¹SO2R₁)2-x]n, where , R₁ is a C1-C8 perfluoroalkyl, where R² is selected from the group consisting of -CH2CH3, -C6H4CH3, -CH2CH2OCH2CH2OCH3, -CH2CH2OTHP where THP is tetrahydropyranl, - C6H4COOPr, -CH2CF3, -CH2CF2OCF2CF2OCF3, -C6H4CF3, -C6F5, Z is O or NH, and R¹ is selected from the group consisting of Na, Li and K, comprising,

reacting (PNCl<sub>2</sub>)<sub>fv</sub>, where n≥3 with a first amount of compound of the formula R<sup>3</sup>R<sup>2</sup> where R<sup>3</sup> is selected from the group consisting of -NaO, -LiO, -KO, NH<sub>2</sub> or mixtures thereof, R<sup>2</sup> is selected from the group consisting of -CH<sub>2</sub>CH<sub>3</sub>, -C<sub>6</sub>H<sub>4</sub>CH<sub>3</sub>, -CH<sub>2</sub>CH<sub>2</sub>OCH<sub>2</sub>,-CH<sub>2</sub>CI I<sub>2</sub>OTHP where THP is tetrahydropyranyl, - C<sub>6</sub>H<sub>4</sub>COOPr, -CH<sub>2</sub>CF<sub>3</sub>, -CH<sub>2</sub>CF<sub>2</sub>OCF<sub>2</sub>CF<sub>2</sub>OCF<sub>3</sub>, -C<sub>6</sub>H<sub>4</sub>CF<sub>3</sub>, -C<sub>6</sub>F<sub>5</sub>, or mixtures thereof, with a second amount of a compound of the formula R<sup>2</sup>C<sub>6</sub>H<sub>4</sub>SO<sub>2</sub>NHSO<sub>2</sub>R<sub>1</sub> where R<sub>1</sub> is a C<sub>1</sub>-C<sub>8</sub> perfluoroalkyl, where R<sup>2</sup> is selected from the group consisting of -NaO, -LiO, -KO, NH or mixtures thereof, at a first temperature of about 60 °C to about 200 °C to produce a reaction product,

reacting the reaction product with  $R^3R^2$  at a second temperature of 60  $^{\circ}$ C to about 200  $^{\circ}$ C at a pressure of about 3.5-4 bar.

47(new). A haloalkoxy sulfonimide functionalized polyphosphazene of the formula  $(NP(OCH_2(CF_2)_4H)_2)_X (NP(OCH_2(CF_2)_4H)OC_6H_4SO_2NR^1SO_2R_1)_{(1-x)}$  where  $R^1$  is selected from the group consisting of Na, Li, H, and K, and where  $R_1$  is a  $C_1$ - $C_8$  perfluoroalkyl.

48(new). The haloalkoxy sulfonimide functionalized polyphosphazene of claim 47

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